Town of Tewksbury

Storm Water Management Plan (SWMP)

Storm Water Management Plan

Tewksbury, MA NPDES Phase II Stormwater Plan

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Town Biography

Location:

In Middlesex County near the junction of Rt. 495 and Rt. 93 in northeastern MA. The town is bordered on the north by the Merrimack River, northeast by the Town of Andover, southeast by the Town of Wilmington, Southwest by the Town of Billerica and borders on the city of Lowell to the west. Tewksbury is 21 miles from Boston, 50 miles from Worcester, 30 miles from Salisbury Beach, and 230 miles from New York City.

Size 20.7 sq. mi.

Assessed 10,789.5 acres

Population 29,770

Population Density 1438/sq. mi.

Residential Tax Rate \$12.65

Avg. Property Value \$212,474

Mean annual precipitation 43.4"

Mean Temperature January 26.6° July 73.7°

Topography

Fairly level terrain, with elevations varying from 100' to 200' above sea level. Soil is a mixture of sandy soil in the southern section. Wet and moist and of good texture along the central and northern sections.

Tewksbury's current water situation.

The current list of water bodies that have been identified by MA DEP as polluted. The table below lists them all.

			Pollutants/Stressors
Ames Pond	MA83001	Tewksbury	2200 Noxious aquatic plants
Long Pond	MA83010	Tewksbury	0900 Nutrients 2200 Noxious aquatic plants
Round Pond	MA83018	Tewksbury	2200 Noxious aquatic plants
Trull Brook	MA84A-14	Source to confluence with Merrimack River, Tewksbury Miles 3.25-0.00	0100 Unknown toxicity

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Minimum Control Measures

This Stormwater Management Plan (SWMP) will address the practices the Town of Tewksbury will begin to implement in order to better protect natural sources of water.

The Six minimum control measures that are required to be addressed are

Public Education and Outreach

Public Involvement and Participation

Illicit Discharge Detection and Elimination

Construction Site Run off control

Post Construction Run off control

Pollution Prevention/ Good Housekeeping for Municipal Operations

Tewksbury will also be implementing additional control measures to address water quality in several water bodies in town. These water bodies are listed in the previous section; Ames Pond, Long Pond, Round Pond, and Trull Brook.

Each control measure, and the Best Management Practice (BMP) associated with that control measure, is described in detail in the following sections.

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Control Measure #1: Public Education and Outreach

BMP 1 A: Send out Storm Water Flyer to Community Residents

BMP Description: A storm water flyer will be sent to residents in the community during year #1. The flyer will cover topics such as pesticide and herbicide use in lawns and gardens, water conservation practices, pet waste management, trash management, car washing, and proper disposal of household hazardous wastes including motor oil. In a user-friendly and appealing manner, the flyer will explain what storm water is and will frame storm water concerns from a watershed perspective. The flyer is meant to be an educational and motivational tool, increasing public awareness of storm water and empowering citizens regarding their influence on storm water quality and flow.

The flyer will include a storm water awareness survey that citizens can tear-off and submit to the municipality for compilation. The tear-off survey can be returned at the storm water display (see Permit Year #1, Control Measure #2), through the mail to the Town Engineer, or by some other means. The purpose of the survey is to establish a baseline on general awareness of storm water issues in Tewksbury.

Primary Audience: homeowners and general public **Measurable Goal:**

- ✓ flyer distributed to a minimum of 75% of residents
- ✓ compiled and considered Tewksbury and multi-watershed-wide "survey" results

Responsible Parties: SuAsCo Watershed Community Council (WCC), Water Billing Department Implementation Strategies: The SuAsCo WCC will create the text and layout of the flyer. The SuAsCo WCC will provide a master hard copy and an electronic copy of the flyer to Tewksbury. The SuAsCo WCC will also post a generic version of the flyer on its website. Tewksbury will duplicate the flyer and distribute the flyer to residents. Implementation strategies for distribution of the flyer include sending it as a water or utility bill insert, sending it with property tax bills, sending it home via school children, posting flyers in strategic places around the community, or by some other means.

Timeline: The flyer will be distributed in the Fall of 2003. Survey results will be compiled by February of 2004.

Annual Evaluation: The SuAsCo WCC will provide a master tabulation form to Tewksbury for compiling the results of returned flyer surveys. Tewksbury will compile survey results on the tabulation form and provide the completed tabulation form to the SuAsCo WCC. The SuAsCo WCC will compile the survey results from all of the municipalities into a multi-watershed-wide survey summary that it will provide to Tewksbury. Tewksbury may use these survey results as a baseline from which to gauge the effectiveness of its storm water education and participation program.

The SuAsCo WCC will prepare an annual summary on the education and outreach BMP for permit year #1, the storm water flyer for community residents. Tewksbury will revise this summary to reflect its community-specific experience with the storm water flyer for residents.

BMP 1 B: Teach Storm Water Lesson Plan to 5th Grade Students

BMP Description: The lesson plan for the fifth grade level will be straightforward, self-explanatory and easy to teach. It will be a stand-alone lesson plan that can be readily fit into the curriculum. The lesson plan will consist of a few simple teaching exercises and worksheets. The lesson plan will cover: what is a watershed (including a map), what is storm water, why storm water is a concern, what students can do to lessen their impacts on storm water, and a reminder of the poster contest.

Primary Audience: fifth grade school students and the general public

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Measurable Goals:

- ✓ develop and distribute lesson plan to implement at the Grade 5 level
- ✓ lesson plan is taught in one or more Grade 5 classrooms in the community

Responsible Parties: SuAsCo Watershed Community Council (WCC), Tewksbury School Superintendent

Implementation Strategies: The SuAsCo WCC will create the text of the lesson plan and accompanying worksheets. The SuAsCo WCC will provide a master copy of the lesson plan and worksheets in hard copy and electronic copy to Tewksbury.

At River Visions 2004, the SuAsCo WCC will host a workshop for teachers to familiarize them with the storm water lesson plan. Attendance at the workshop will be optional as it will enhance but not be necessary to the effective instruction of the lesson plan.

Tewksbury will duplicate and distribute the lesson plan packets to the fifth grade teachers, recommending implementation.

Teachers may elect to combine the lesson plan with similar subject matter, such as activities from Project WET or Project WILD. Teachers may also expand on the lesson plan by combining it with field trips, or by inviting appropriate speakers such as from a state agency, from Tewksbury or from a local Stream Team. Teachers will encourage students to participate in the storm water poster contest.

Timeline: The lesson plan will be provided to the municipality in the spring of 2004. The lesson plan will be taught in the Fall of 2004.

Annual Evaluation: The SuAsCo WCC will prepare an annual summary on the education and outreach BMP for permit year #2, the storm water lesson plan. Tewksbury will revise this summary to reflect their community-specific experience with the storm water lesson plan.

BMP 1 C: Send out Storm Water Flyer to Community Businesses

BMP Description: A storm water flyer will be sent to businesses in the community during permit year #3. The flyer will explain what storm water is and will frame storm water concerns from a watershed perspective. The flyer will discuss potential impacts by businesses on storm water quality and flow. The flyer is meant to be both an educational and motivational tool, increasing awareness of storm water in the business community and challenging businesses to take steps towards storm water quality improvements in their own business practices. The storm water flyer will include a self-test for businesses to grade their own storm water "compliance". Businesses that deem themselves "storm water aware and participatory", i.e. compliant with good storm water practices according to the self-test, will be given a decal sticker of the storm water logo to display in their establishment for the general public to see. Storm water "participatory measures" may include improved housekeeping in parking areas, litter management in loading docks, restaurant installation and maintenance of grease traps, stores carrying and promoting environmentally friendly products, employee training and other similar activities.

Primary audience: businesses and the general public **Measurable Goals:**

- flyer distributed to a minimum of 50% of businesses in Tewksbury such as auto shops and gas stations, commercial and retail operations with parking lots, lawn care companies, restaurants, construction and development companies
- ✓ storm water logo displayed by half of the businesses receiving the flyer

Responsible Parties: SuAsCo Watershed Community Council (WCC), Water Billing Department Implementation Strategies: The SuAsCo WCC will create the text and layout of the flyer. The

SuAsCo WCC will provide a master hard copy and an electronic copy of the flyer to Tewksbury. The SuAsCo WCC will provide a master hard copy and electronic copy of the storm water decal to the town for reproduction, or it may provide a set number of already produced decal stickers to the town.

Tewksbury will duplicate and distribute the flyer to pre-selected or to all businesses in the community, depending on the means of distribution chosen. Implementation strategies for distribution of the flyer include sending it as a water or utility bill insert, sending it with

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commercial property tax bills, or distributing it through the local Chamber of Commerce. Tewksbury will duplicate as necessary and distribute the decal to businesses. The decal may be mailed directly with the flyer or it may be distributed in response to a business' completion and submission of the flyer self test.

The town may organize a junior achievement group, student honor society, scouts troop, or senior citizen organization to follow up with businesses to assess their storm water compliance and confirm that they are displaying their storm water decal.

Timeline: The flyer will be distributed in the Fall of 2005. The percentage of businesses displaying decals will be assessed by February of 2006.

Annual Evaluation: The SuAsCo WCC will prepare an annual summary on the education and outreach BMP for permit year #3, the storm water flyer for community businesses. The municipality will revise this summary to reflect their community-specific experience with the storm water flyer for businesses.

BMP 1 D: Hold a Storm Water Media Campaign

BMP Description: The Storm Water Media Campaign will engage local news media (newspapers, radio stations, and cable stations) in raising public awareness about storm water. Media information packets and periodic press releases will be developed for use in the "campaign". The media information packet will explain general storm water issues and impacts, the NPDES Storm Water Phase II program, and the town's and the SuAsCo WCC's role in storm water management. The packet will also include examples of storm water program activities. The press releases will cover such topics as what is storm water, the town's 5-year storm water management program, the SuAsCo WCC's storm water education and involvement program, how the general public can help improve storm water quality and prevent polluted runoff, ongoing community and collaborative efforts to manage storm water, and the Storm Water Summit (see Permit Year #4, Control Measure #2).

Primary audience: general public

Measurable Goals:

- ✓ media information packet delivered to the local media
- ✓ 4 press releases generated and issued to local media and major media outlets

 Responsible Parties: SuAsCo Watershed Community Council (WCC), Town Manager

 Implementation Strategies: The SuAsCo WCC will develop media kits and periodic storm water

 press releases. The SuAsCo WCC will provide the media kit and press releases to

 Tewksbury in hard copy and electronic copy.

The storm water contact in the town may edit the media information packet and storm water press releases as appropriate to include community-specific information and to include community contact names and phone numbers. The town storm water contact will forward the media information packet and completed press releases to the local press, availing of potential opportunities for more in-depth interviews by reporters. The town storm water contact will invite local officials, legislators, local reporters, radio announcers, and community access cable station managers to attend the Storm Water Summit (see Permit Year # 4. Control Measure # 2).

The SuAsCo WCC will also issue the storm water press releases to major newspapers, and will post the storm water press releases on the SuAsCo WCC website. A calendar of events and other information about storm water management will also be posted on the SuAsCo WCC website and will be updated regularly.

Timeline: The media information packet will be provided to Tewksbury in the spring or summer of 2006. Storm water press releases will be generated and issued to the media on approximately a quarterly basis through March of 2007.

Annual Evaluation: The SuAsCo WCC will prepare an annual summary on the education and outreach BMP for permit year #4, the storm water media campaign. Tewksbury will revise this summary to reflect their community-specific experience with the storm water media campaign.

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BMP 1 E: Show a Storm Water Video on Local Cable Stations and at Local Meetings

BMP Description: A high-quality video about storm water will be shown to the general public at local meetings and through local cable stations. In a user-friendly and engaging manner, the video will explain what storm water is and will address how citizens can help improve storm water quality and flow.

Primary audience: general public

Measurable Goals:

- ✓ show storm water video at a minimum of one public meeting.
- ✓ air storm water video at least once on local cable station

Responsible Parties: SuAsCo Watershed Community Council (WCC), Assistant to Town Manager Implementation Strategies: The SuAsCo WCC will either create a storm water video, perhaps in collaboration with other entities such as high schools or other organizations, or the SuAsCo WCC will obtain a video from another source that it may distribute freely. The SuAsCo WCC will provide one master copy of the video to Tewksbury and one master copy to the local cable stations.

Tewksbury will feature the storm water video at selected events and meetings as appropriate. The town may also elect to share the video with local civic groups such as Rotary Clubs, potentially sending a municipal staff person to accompany the video as a guest speaker. The town will contact the local cable station to offer interview opportunities and local information that the cable station may use to enhance their airing of the video as a public education piece.

Timeline: The SuAsCo WCC will provide the storm water video to Tewksbury and the local cable station in the Spring of 2007. The video will be aired as feasible throughout the permit year both at town public meetings and on the local cable station.

Annual Evaluation: The SuAsCo WCC will prepare an annual summary on the education and outreach BMP for permit year #5, the storm water video. The town will revise this summary to reflect their community-specific experience with the storm water video.

Control Measure # 2: Public Involvement and Participation

BMP 2 A: Circulate Storm Water Traveling Display in Community

BMP Description: The Storm Water Traveling Display is a portable folding display board that can be located at various locations in the community, such as the municipal building, public library, schools, post office, and at community events. The display will have a professional, attractive appearance that is eye-catching and appealing. The display can be conveniently placed on a table in a visible and central location frequented by the general public. Extra storm water flyers will be posted with the display along with a collection box for the citizen storm water survey.

Similar to the flyer, the display will explain what storm water is and will frame storm water concerns from a watershed perspective. The display will present practical ideas for how citizens can manage housekeeping practices so as to have a positive impact on storm water. Such practices may include pesticide and herbicide use on lawns and gardens, water conservation, pet waste management, trash management, car washing, and proper disposal of household hazardous wastes including motor oil. The display is meant to be an educational and motivational tool, increasing public awareness of storm water and empowering citizens regarding their influence on storm water quality and flow.

Primary Audience: homeowners and general public **Measurable Goals:**

storm water display circulates around the community for a minimum of 3 months in permit vear #1

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- ✓ storm water display is posted at a minimum of 3 different public locations in the community
 in permit year #1
- ✓ storm water display is also used in future permit years for posting in public places or at storm water events

Responsible Parties: SuAsCo Watershed Community Council (WCC), Town Engineer Implementation Strategies: The SuAsCo WCC will create the text and layout of the storm water traveling display. The SuAsCo WCC will provide one completely prepared folding display board to the town in the Fall of 2003.

The town will comply with the state public notice requirements at MGL Chapter 39 Section 23B in implementing this BMP. The town will identify and arrange for display locations, such as the municipal building, public library, schools, post office and specific community events. The town will rotate the display around the community by transporting it and posting it in these identified public places. Periodically, the town will check the display integrity, replenish the flyers, and collect the surveys.

Timeline: The storm water traveling display will be exhibited during the period from the Fall of 2003 through March of 2004.

Annual Evaluation: The SuAsCo WCC will prepare an annual summary on the involvement and participation BMP for permit year #1, the storm water traveling display. The town will revise this summary to reflect their community-specific experience with the storm water traveling display.

BMP 2 B: Hold a Storm Water Poster Contest for 5th Grade Students

BMP Description: The Storm Water Poster Contest will engage fifth grade students in understanding storm water and creatively depicting their knowledge through a poster medium. The general public will also be involved in the poster contest through parent interaction with the students, the creation of a panel of judges, and display of the posters in public locations.

Primary Audience: fifth grade school students and the general public **Measurable Goals:**

✓ poster contest is held and entries are received, judged and displayed
 Responsible Parties: SuAsCo Watershed Community Council (WCC), Tewksbury School

Superintendent
Implementation Strategies: The SuAsCo WCC will create the poster contest rules and will provide

Implementation Strategies: The SuAsCo WCC will create the poster contest rules and will provide the rules in the fifth grade lesson plans. The contest rules also will be posted on the SuAsCo WCC website.

The town will comply with the state public notice requirements at MGL Chapter 39 Section 23B in implementing this BMP.

The town may consider offering prizes as an incentive for students to enter the poster contest.

Poster entries will be submitted to the town by the end of January. The town will nominate a panel of judges for the poster contest. Poster winners will be declared in February. The town may display all poster entries in a variety of locations such as at the schools, public library, or municipal buildings. The first place winner for the town will be submitted to the SuAsCo WCC multi-watershed-wide contest.

In an open forum, the SuAsCo WCC will judge from among the municipal winners to determine watershed winners. Note that only entries from municipalities that have subscribed to the SuAsCo storm water program will be accepted into the contest. The watershed winners will be posted on the SuAsCo WCC website. The SuAsCo WCC also will display, and possibly award, the first place municipal winners and watershed winners at the River Visions 2005 Forum.

The SuAsCo WCC and the town may use the poster entries for future outreach and education materials and events.

Timeline: The SuAsCo WCC will provide poster contest rules to Tewksbury by the Fall of 2004. The deadline for receipt of poster entries will be by the end of January of 2005. Poster entries

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will be displayed and judged in February of 2005. The first place winner in each municipality may be displayed and recognized at the River Visions 2005 Forum.

Annual Evaluation: The SuAsCo WCC will prepare an annual summary on the involvement and participation BMP for permit year #2, the storm water poster contest. The town will revise this summary to reflect their community-specific experience with the storm water poster contest.

BMP 2 C: Hold Storm Water Photo Contest for High School Students

BMP Description: The Storm Water Photo Contest will engage high school students in understanding storm water, its effect on water quality, and good storm water management strategies. The photo contest will challenge high school students to creatively depict their knowledge through a photographic medium. The general public will also be involved in the photo contest through parent interaction with the students, the creation of a panel of judges, and display of the photographs in a public location.

Primary audience: high school students and the general public **Measurable Goals:**

✓ photo contest is held and entries are received, judged and displayed
Responsible Parties: SuAsCo Watershed Community Council (WCC), Tewksbury School
Superintendent

Implementation Strategies: The SuAsCo WCC will create the photography contest rules and will provide the rules to the municipality. The contest rules will also be posted on the SuAsCo WCC Website.

The town will comply with the state public notice requirements at MGL Chapter 39 Section 23B in implementing this BMP. The town will pass the photography contest rules along to the high school and when applicable, to the high school cable studio. The town may consider offering prizes as an incentive for students to enter the photo contest. Photo contest entries will be submitted to the town by the end of January. The town will nominate a panel of judges for the photo contest. It is recommended that judges be selected from the businesses displaying their storm water decal. Photo winners will be declared in February. The municipalities may display all photo entries in a variety of locations such as at the high school, public library, or municipal buildings. The first place winner for a municipality will be submitted to the SuAsCo WCC multi-watershed-wide contest.

In an open forum, the SuAsCo WCC will judge from among the municipal winners to determine watershed winners. Note that only entries from municipalities that have subscribed to the SuAsCo storm water program will be accepted into the contest. The watershed winners will be posted on the SuAsCo WCC website. The SuAsCo WCC will display, and possibly award, the first place municipal winners and watershed winners at the River Visions 2006 Forum.

The SuAsCo WCC and the town may use the photo entries for future outreach and education materials and events.

Timeline: The SuAsCo WCC will provide photography contest rules to the town by the Fall of 2005. The deadline for receipt of photo entries will be by the end of January of 2006. Photo entries will be displayed and judged in February of 2006. The first place winner in each municipality may be displayed and recognized at the River Visions 2006 Forum.

Annual Evaluation: The SuAsCo WCC will prepare an annual summary on the involvement and participation BMP for permit year #3, the storm water photo contest. The town will revise this summary to reflect their community-specific experience with the storm water photo contest.

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BMP 2 D: Hold a Local Storm Water Summit

BMP Description: A "Storm Water Summit" will be held as a special event for the general public (residents and community businesses) to learn about and discuss storm water concerns. The Storm Water Summit will show case Tewksbury's storm water program and progress. The agenda will include guest speakers on topics such as the town's storm water program and good housekeeping practices that citizens and businesses can employ to reduce the pollutants in and volume of storm water. The summit may also be used as a forum to seek input on new or proposed bylaws that address pre- and post-construction site runoff. The summit will also provide citizens with an opportunity to raise concerns about storm water situations in their own neighborhoods.

The Storm Water Summit will run from two to three hours in duration as an early evening program, and may include refreshments, displays, videos, speakers, and demonstrations for the general public. The summit will actively involve residents and businesses in their town storm water program, giving them ideas that they can implement and soliciting their feedback on the municipal program. The poster contest and photo contest entries, as well as the traveling display, may be exhibited at the summit to help foster a sense of citizen ownership and community pride in the storm water program.

Primary Audience: general public

Measurable Goals:

- √ hold local or multi-community Storm Water Summit
- ✓ advertise to encourage Storm Water Summit community attendance

Responsible Parties: SuAsCo Watershed Community Council (WCC), Community Development Director

Implementation Strategies: The SuAsCo WCC will provide guidelines to Tewksbury for organizing the Storm Water Summit. The guidelines will address a recommended agenda, venue and guest speakers for the summit. The SuAsCo WCC will provide a speaker for the event. The SuAsCo WCC will assist with advertising the event by posting the summit in the SuAsCo e-mail calendar and on the SuAsCo WCC website.

The town will comply with the state public notice requirements at MGL Chapter 39 Section 23B in implementing this BMP. The town will plan and coordinate the summit logistics, establishing a date and location for the event, and lining up guest speakers and facilitators. The town will advertise the summit by issuing a public announcement and a press release. The town will invite the media to attend the event in order to generate follow-up coverage for a broader audience. Tewksbury officials in charge of the storm water program will attend and facilitate the event.

Municipalities are encouraged to collaborate with one another on hosting a multicommunity storm water summit where feasible. Neighboring communities that share the same tributary or river segment within the watershed may find it practical to pool their resources in hosting one event together. A multi-community summit also has the advantage of creating a forum where communities can learn from one another.

Timeline: The local or multi-community Storm Water Summit will be held between September of 2006 and February of 2007.

Annual Evaluation: The SuAsCo WCC will prepare an annual summary on the involvement and participation BMP for permit year #4, the local or multi-community storm water summit. The town will revise this summary to reflect their community-specific experience with the storm water summit.

BMP 2 E: Participate in the SuAsCo Storm Water Super Summit and Conduct an Evaluation and Assessment of Public Awareness of Storm Water

BMP Description: The SuAsCo "Watershed-Wide Super Summit" will be held as part of the River Visions 2007 Forum. It will include speakers from agencies, businesses, and

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municipalities, providing a unique opportunity for communities to share information and exchange experiences about their storm water programs.

The Evaluation and Assessment will provide municipal citizens with a storm water "self-test" through which they can "grade" their own storm water knowledge. The purpose of the self-test will be to see how widely received the storm water program activities have been over the past four years and to gauge the public's familiarity with storm water concepts.

Primary audience: general public

Measurable Goals:

- ✓ municipal participation in the Storm Water Super Summit
- ✓ Storm Water Self Test distributed to a minimum of 75% of residents
- ✓ compiled and considered municipal and multi-watershed-wide "self test" results

Responsible Parties: SuAsCo Watershed Community Council (WCC), Town Engineer Implementation Strategies: The SuAsCo WCC will coordinate and host a "Storm Water Super

Summit" as part of the River Visions 2007 program. At the Super Summit, municipalities will share their communities' successes, goals, lessons learned, and measurable results. The Super Summit provides a unique opportunity for communities to share information and exchange experiences about their storm water programs. Speakers from agencies and organizations will also provide updates on the Phase II storm water program and the outlook for the next 5-year permit period. The SuAsCo WCC will issue two press releases before and after the River Visions 2007 Forum that will highlight the Storm Water Super Summit.

The town will comply with the state public notice requirements at MGL Chapter 39 Section 23B in implementing this BMP. The town will advertise the Storm Water Super Summit by issuing public notices, posting flyers in public locations, or by some other means. The town will send public officials to the Super Summit.

The SuAsCo WCC will create the text of the "self test" which may also list helpful resources. The SuAsCo WCC will provide a master hard copy and electronic copy of the self-test to the Town of Tewksbury.

Tewksbury will duplicate and distribute the "self test". Implementation strategies for distribution of the "self test" include sending it as a water or utility bill insert, sending it with property tax bills, sending it home via school children, posting it in strategic places around the community, giving out the self-test at public meetings such as an annual town meeting, posting it on the municipal website, airing it on local cable following the storm water video, or by some other means. Implementation strategies for collection of the "self test" include posting collection boxes in public places, combining it with a redeemable coupon to encourage return, returning it at hazardous waste collection days, or by some other means. Communities may want to offer an incentive or prize to encourage residents to return the "self test".

Timeline: The Storm Water Super Summit will be held in the spring of 2007. "Self tests" will be available throughout the permit year. "Self test" results will be compiled by the end of February of 2008.

Annual Evaluation: The SuAsCo WCC will provide a master tabulation form to the town for compiling the results of returned "self tests". The town will compile the "self test" results on the tabulation form and provide the completed tabulation form to the SuAsCo WCC. The SuAsCo WCC will compile the "self test" results from all of the municipalities into a multi-watershed-wide assessment of program outreach success. The SuAsCo WCC will provide the multi-watershed-wide assessment to the town.

The town may compare the self test results against the year # 1 survey results to gauge the effectiveness of its storm water education and participation program. The town and multi-watershed-wide "self test" results will be an important tool in evaluating the success of the 5-year program and designing the next 5-year program plan.

The SuAsCo WCC will prepare an annual summary on the involvement and participation BMP for permit year #5, the storm water evaluation and assessment and the Super Summit. The Town of Tewksbury will revise this summary to reflect their community-

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specific experience with the storm water evaluation and assessment and the Super Summit.

Control Measure # 3: Illicit Discharge Detection and Elimination

BMP 3 A: Capital Planning/Budgeting

BMP Description: Capital planning to be done for forecasted purchases for stormwater system

upkeep in future years.

Primary Audience: DPW Measurable Goals:

✓ Estimate costs for purchases and maintenance

✓ Capital requests for future purchases

Responsible Parties: DPW

Implementation Strategies: Review future purchases with estimated values. Distribute the values

over 4 years and forecast the expenditures for permit year 5.

Timeline: Annually.

Annual Evaluation: Annual Status Report

BMP 3 B: DPW Employee Training

BMP Description: Training will be straightforward and self-explanatory. The lesson plan will cover:

what is a watershed, what is storm water, why storm water is a concern, and what

employees can do to lessen their impacts on storm water.

Primary Audience: Municipal Employees, commission members

Measurable Goals:

√ 80% of employees trained each year

Responsible Parties: DPW, Town Engineer

Implementation Strategies: Town Engineer will coordinate training to inform all pubic employees of

hazards associated with illegal discharges and improper waste disposal.

Timeline: Annually.

Annual Evaluation: Annual Status Report

BMP 3 C: Mapping Known Stormwater Outfalls

BMP Description: Create a map with all known stormwater outfalls in the most advanced medium

available.

Primary Audience: Engineering

Measurable Goals:

Creation of a map with known outfalls.

✓ Put data in an electronic format (i.e., AutoCad, GIS, etc.)

Responsible Parties: Engineering

Implementation Strategies: Take data from various Engineering department files and create a map

of known outfalls.

Timeline: during the period from the Fall of 2003 through March of 2004.

Annual Evaluation: Annual Status Report

BMP 3 D: Mapping Stormwater Outfalls

BMP Description: Investigate and locate unknown outfalls.

Primary Audience: Engineering

Measurable Goals:

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- ✓ Investigate 25% of town per year
- ✓ Identify unknown stormwater outfalls

Responsible Parties: Engineering and DPW Personnel

Implementation Strategies: All data will need to be put into an electronic format. Most likely, a consultant will be hired to perform this work.

Timeline: Investigations will be performed during the fall of each year. Any necessary mapping will be

performed during the winter of each year.

Annual Evaluation: Annual Status Report

BMP 3 E: Failing Septic Systems

BMP Description: Use current septic system inspection procedure to ensure that any system identified as having failed will be not discharge into the municipal stormwater drainage system

Primary Audience: Residents and businesses not yet connected to Town Sewer

Measurable Goals:

✓ Review Title 5 Reports to identify problems

✓ Use current reporting system to follow through with rectifying failed systems

Responsible Parties: Board of Health

Implementation Strategies: Continue with current inspection program

Timeline: Annually.

Annual Evaluation: Annual Status Report

BMP 3 F: Sampling Programs

BMP Description: Take water samples to identify any sewage or pollutants in storm water outfalls.

Primary Audience: BOH/Inspectors/DPW employees

Measurable Goals:

✓ up to 24 Stations sampled 3 times per year

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Responsible Parties: Board of Health

Implementation Strategies: Reduce or eliminate all non-stormwater sources of pollution.

Timeline: Annually.

Annual Evaluation: Annual Status Report

BMP 3 G: Stormwater By-Law

BMP Description: Prohibit non-storm water in the municipal drainage system by by-law. Town will need the ability to enforce regulations about illegal connections. Entry to homes could become necessary. Enforcement and inspection details need to be defined.

Primary Audience: All inspectors

Measurable Goals:

 \checkmark Draft by-law and work with Boards to achieve acceptable language for passage

Responsible Parties: Board of Selectmen, Planning Board, Health Department, Engineering **Implementation Strategies:** Obtain explicit authorization to control inputs to the municipal drainage system.

Timeline: Wording to be developed during the Spring and Summer of 2005.

Annual Evaluation: Annual Status Report

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Control Measure # 4: Construction Site Stormwater Runoff Control

BMP 4 A: Site Plan Review

BMP Description: Add stormwater management practices and design aspects to the site plan review procedure.

Primary Audience: Engineering, Planning Board Engineer

Measurable Goals:

- ✓ Add stormwater runoff control verification to check list for approval
- ✓ Site inspections will be performed and enforcement mechanisms developed

Responsible Parties: Planning Board

Implementation Strategies: Procedures for site plan review including procedures which incorporate consideration of potential water quality impacts. The site plan review should include procedures for pre-construction review. All projects sent in for review will need to have stormwater runoff control measures specified on all drawings.

Timeline: Fall of 2004

Annual Evaluation: Annual status report

BMP 4 B: Runoff By-Law

BMP Description: Develop procedures to control run-off

Primary Audience: Inspectors

Measurable Goals:

- ✓ Draft and present; adjust until accepted
- ✓ Inspection procedures and enforcement rules to be developed

Responsible Parties: Planning Board

Implementation Strategies: Timeline: Fall of 2004

Annual Evaluation: Annual status report

BMP 4 C: Building Permit Requirement

BMP Description: Add to the Building Permit process a verification that the developer has filed for the appropriate permits with the DEP or EPA.

Primary Audience: Developers/Owners, Building Department, Engineering

Measurable Goals:

- Process developed and checklist designed to include NPDES permits
- ✓ Developers providing necessary copies to the Town

Responsible Parties: Building Department, Engineering

Implementation Strategies: The Building Department's Checklist for Community Development (the greensheet) will have a check box added to it. No Building Permit will be issued without the Town Engineer verifying that a NPDES Permit has been filed by the developer/owner if it is necessary.

Timeline: Fall of 2003

Annual Evaluation: Annual status report

BMP 4 D: Inspection Reports

BMP Description: Add Stormwater Inspection requirements to all Town inspections.

Primary Audience: Developers/Owners and Town Inspectors

Measurable Goals:

✓ Train all inspectors (Plumbing, Sewer, Building)

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✓ Create inspection reports

✓ Inspection of all sites greater than 1 acre

Responsible Parties: Building Inspector, Conservation Commission, Sewer Inspectors

Implementation Strategies: Any town inspector that is on site should always be observant of the

developers compliance with stormwater regulations.

Timeline: Spring through Fall of 2004 **Annual Evaluation:** Annual status report

BMP 4 E: Construction Inspection

BMP Description: Develop procedures for inspections and enforcement of control measures at

construction sites.

Primary Audience: Developers, Engineering Department

Measurable Goals:

✓ Create Inspection Reports

Perform and track inspections

Responsible Parties: Engineering

Implementation Strategies: Construction site inspections are necessary to ensure compliance with

stormwater regulations. Spot inspections will be allowed and inspectors will have

enforcement authority.

Timeline: Winter of 2003

Annual Evaluation: Annual status report

BMP 4 F: Erosion Control Measures

BMP Description: Develop requirements for construction site operators to implement a sediment and erosion control program which includes BMPs that are appropriate for the conditions the site, including efforts to minimize the area of the land disturbance.

Primary Audience: Developers, Conservation Commission

Measurable Goals:

✓ Create Inspection Reports

✓ Perform and track inspections

Responsible Parties: Conservation Commission

Implementation Strategies: Timeline: Winter of 2004

Annual Evaluation: Annual status report

BMP 4 G: Ordinances for Construction Controls

BMP Description: Develop by-law to require sediment and erosion control at construction sites.

Primary Audience: Developers, Conservation Commission

Measurable Goals:

✓ Draft and present; adjust until accepted

/

Responsible Parties: Planning Board

Implementation Strategies: By-law must include sanctions to ensure compliance with the program.

Sanctions may include both monetary or non-monetary penalties.

Timeline: Winter of 2006

Annual Evaluation: Annual status report

BMP 4 H: Spill Prevention Plans

BMP Description: Develop requirements for on site spill prevention to be filed with site plans

Primary Audience: Developer/Owner, Planning Board

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Measurable Goals:

✓ File with Site Plan Application

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Responsible Parties: Board of Health/DPW, Planning Board

Implementation Strategies: The Spill Prevention Plan will have to be filed with the Site Plan to the

Planning Board. The plan will need to be comprehensive for the project proposed for the

Site plan to be accepted.

Timeline: Winter of 2007

Annual Evaluation: Annual status report

Control Measure # 5: Post Construction Stormwater Management

BMP 5 A: Training for Municipal Employees and Commission Members

BMP Description: Stormwater Policy Handbook Vol. I by MADEP

Primary Audience: Planning Board, Conservation Commission, DPW Employees

Measurable Goals:

√ 80% of members/employees attend training each year

✓ Review existing policy for update

Responsible Parties: Planning Board

Implementation Strategies: Training to be performed by Dept. of Community Development and DEP

Timeline: Winter of 2003

Annual Evaluation: Annual report on Number of participants

BMP 5 B: Design Standards

BMP Description: Stormwater Policy Handbook Vol. II by MADEP

Primary Audience: Planning Board, Conservation Commission, DPW Employees

Measurable Goals:

√ 80% of members/employees attend training each year

✓ Review existing policy for update
Responsible Parties: Planning Board and DPW

Implementation Strategies: Training to be performed by Dept. of Community Development and DEP

Timeline: Winter of 2004

Annual Evaluation: Annual report on Number of participants

BMP 5 C: Post-Construction By-Law

BMP Description: Develop and implement a storm water by-law and guidance or a design manual that include performance standards designed to control runoff impacts. Erosion and sediment control by-law.

Primary Audience: Planning Board, Conservation Commission, Building Dept., General public **Measurable Goals:**

✓ Review Current by-laws

Draft and present; adjust until accepted

Responsible Parties: Planning Board

Implementation Strategies: Department of Community Development will spearhead the actions.

Timeline: Winter of 2005

Annual Evaluation: Annual status report

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BMP 5 D: Zoning By-Laws

BMP Description: Tree Clearing and Removal By-Law

Primary Audience: Planning Board, Conservation Commission, Building Dept., General public

Measurable Goals:

✓ Review Current by-laws

Draft and present; adjust until accepted

Responsible Parties: ZBL

Implementation Strategies: Department of Community Development will spearhead the actions.

Timeline: Winter of 2006

Annual Evaluation: Annual status report

BMP 5 E: Sub-Division Regulations

BMP Description: Filling, excavating and grading regulations. Also, to reduce directly connected impervious surfaces in new developments and redevelopment projects by requiring that grassed swales or filter strips be installed along roadsides in lieu of curbs and gutters, i.e., Low Impact Development (LID) practices.

Primary Audience: Planning Board, Conservation Commission, Building Dept., General public **Measurable Goals:**

✓ Review Current by-laws

✓ Draft and present; adjust until accepted

✓ Directly connected impervious road surfaces in new development and redevelopment areas will be reduced by 20% (relative to the traditional scenario in which curbs and gutters are sued) over the course of the 5 year permit.

Responsible Parties: Planning Board

Implementation Strategies: Department of Community Development will spearhead the actions.

Timeline: Winter of 2007

Annual Evaluation: Annual status report

Control Measure # 6: Pollution Prevention - Good Housekeeping

BMP 6 A: CB/Drain System/Parking Lot Cleaning

BMP Description: Clean out catch basins and lengths of stormwater drainage pipes. Parking lots and streets will be swept

Primary Audience: DPW employees

Measurable Goals:

✓ Clean 50% of Catch Basins annually

✓ Clean 100% of parking lots annually

✓ Clean 50% of streets annually

Responsible Parties: DPW

Implementation Strategies: Catch basins will be cleaned by an accepted contractor for the first three years until capital planning allows the town to purchase a new piece of equipment. Streets and lots will be swept by the town owned sweeper.

Timeline: Annually

Annual Evaluation: Annual Status reports

BMP 6 B: Training of all Municipal Employees

BMP Description: Conduct training to assist with putting into effect housekeeping practices, BMPs, and other activities that will reduce stormwater related pollution.

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Storm Water Management Plan

Primary Audience: Town personnel, commission/board members

Measurable Goals:

√ 80% of employees trained

√ housekeeping activities successfully implemented

Responsible Parties: Board of Health/DPW

Implementation Strategies: Shawsheen Watershed team has instituted a program of training for

DPW employees. The town will participate with SWT for this training.

Timeline: Annually

Annual Evaluation: Annual Status reports

BMP 6 C: Capital Planning and Budgeting

BMP Description: Capital planning will be performed for the purpose of purchasing a tight tank for

vehicle washing. The purchase will be in 2006.

Primary Audience: DPW

Measurable Goals:

✓ Capital planning for funds to purchase a tight tank for vehicle washing in Winter 2006

✓

Responsible Parties: DPW

Implementation Strategies: Forecast for the expenditure in year 4.

Timeline: Annually

Annual Evaluation: Annual Status reports

BMP 6 D: Stormwater Pollution Prevention Plan (SPPP)

BMP Description:

Primary Audience:

Measurable Goals:

✓ Compliance with town's SPPP

✓

Responsible Parties: DPW Implementation Strategies:

Timeline: Annually

Annual Evaluation: Annual Status reports

BMP 6 E: Housekeeping Policies

BMP Description: Document all DPW housekeeping procedures

Primary Audience: DPW

Measurable Goals:

✓ publication of housekeeping document

✓ Performance of items in document

Responsible Parties: Board of Health/DPW

Implementation Strategies: Publish a document of all housekeeping procedures and timeframes.

Timeline: Annually

Annual Evaluation: Annual Status reports

BMP 6 F: Hazardous Material Storage

BMP Description: Maintain the hazardous material storage area.

Primary Audience: DPW employees

Measurable Goals:

✓ Inspection Reports of Storage areas

✓ Review of current storage procedures

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Town of Tewksbury

Storm Water Management Plan

Responsible Parties: DPW

Implementation Strategies: The residential monthly waste oil drop off uses this area as well as

DPW employees. Continuation of this procedure.

Timeline: Annually

Annual Evaluation: Annual Status reports

BMP 6 G: Used Oil Recycling

BMP Description: Recycle all used oil from DPW vehicles

Primary Audience: DPW

Measurable Goals:

✓ DPW will participate in Town recycling program

✓ DPW will track amount of oil recycled

Responsible Parties: DPW

Implementation Strategies: DPW will participate in Town recycling program, on the third Saturday

of each month.

Timeline: Annually

Annual Evaluation: Annual Status reports

BMP 6 H: Vehicle Maintenance and Washing

BMP Description: Control all DPW vehicle washing and maintenance

Primary Audience: DPW

Measurable Goals:

✓ Purchase tight tank

✓ Install and train employees on it's use

Responsible Parties: DPW

Implementation Strategies: All DPW vehicle washing will be performed in the tight tank to control

discharge of dirty water. Maintenance will be performed in specified, protected bays.

Timeline: Summer of 2006

Annual Evaluation: Annual Status reports

BMP 6 I: Road Salt Application and Storage

BMP Description: Develop program for storing and applying Road Salt

Primary Audience: DPW

Measurable Goals:

✓ Maintain Storage shed/area

√ keep pile covered

Responsible Parties: DPW

Implementation Strategies: Salt will be stored either in a shed or pile. Appropriate protection for the

salt will be determined and implemented. Application regulations will be determined based

on past history of the town's streets and needs.

Timeline: Annually

Annual Evaluation: Annual Status reports

BMP 6 J: Spill Response and Prevention

BMP Description: Develop spill prevention and control plans for municipal facilities

Primary Audience: DPW employees

Measurable Goals:

develop plans describing spill prevention and control procedures by the end of year 1

✓ Conduct annual spill prevention and response training sessions for all municipal employees

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Responsible Parties: DPW

Implementation Strategies: DPW employees will be trained annually on the procedures for spill prevention. Any spills that do occur will be reported along with a mitigation report and plan

for fixing the problem.

Timeline: Annually

Annual Evaluation: A copy of the Spill Prevention Plan will be filed with this SWMP. Sign in sheets from the annual training sessions will be submitted annually.

BMP 6 K: Illegal Dumping and Storage

BMP Description: Correct and Prevent illegal dumping and/or storage of hazardous materials

Primary Audience: General Public

Measurable Goals:

Investigate as reported

✓

Responsible Parties: Board of Health

Implementation Strategies: Log all complaints and responses in complaint log; investigate and

initiate appropriate actions.

Timeline: Annually

Annual Evaluation: Annual Status reports

BMP 6 L: Landscaping and Lawn Care

BMP Description: Training program for grounds maintenance and landscaping crews

Primary Audience: DPW and Recreation Department

Measurable Goals:

- ✓ In the first year, develop a pollution prevention workshop for all municipal employees responsible for grounds maintenance and landscaping at public facilities.
- ✓ Once per year, hold an additional workshop for new employees and crew managers
- ✓ Achieve a 25% reduction in fertilizer and pesticide use after year 3.

Responsible Parties: DPW/Recreation Department

Implementation Strategies: The workshop should emphasize the benefits of recycling organic material; reducing the use and planning the timing of application of chemicals and water; selecting native vegetation to reduce water nutrient, and maintenance demand; and achieving cost savings through reduced labor and material inputs.

Timeline: Annually

Annual Evaluation: Annual Status reports

BMP 6 M: Hazardous Waste Collection

BMP Description: Conduct residential hazardous waste collection days at DPW to reduce dumping of hazardous waste. This will also help reduce household fire hazards.

Primary Audience: General public

Measurable Goals:

- ✓ Annual Collection Dav. as funded
- ✓ Record and track amount collected

Responsible Parties: Board of Health

Implementation Strategies: See if illicit dumping decreases with easier availability of proper disposal. Hotline and stream watcher reports can be used to gauge the frequency of dumping.

Timeline: Annually

Annual Evaluation: Annual Status reports

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Control Measure #7: Ames Pond TMDL Issues

BMP 7 A: Ames Pond

BMP Description: The BMP will review Total Maximum Daily Load (TMDL) issues involving Ames Pond. The pond has been listed with the MA DEP as having a problem with noxious aquatic plants. The pond is privately owned, meaning that the town can not automatically take responsibility for the water quality issues, nor can it spend scarce public money on the project. The BMP proposes to organize a meeting with the pond owner and representatives of the Merrimack River Watershed Council (MRWC), with the hopes of assisting the owner in addressing the water quality issues.

Primary Audience: Owner of the pond.

Measurable Goals:

- ✓ Coordinate meeting with pond owner and MRWC to discuss further study.
- ✓ Propose options to pond owner for further study.

Responsible Parties: Conservation Commission

Implementation Strategies: The town will invite the pond owner and representatives of the MRWC to meet to discuss the water quality issues, and will encourage the two to work with each other to identify why the plants are growing there, and how to properly address them.

Timeline: Winter of 2005

Annual Evaluation: The Conservation Commission will prepare a written report on the actions taken and accomplished.

Control Measure #7: Long Pond TMDL Issues

BMP 7 B: Long Pond

BMP Description: The BMP will review Total Maximum Daily Load (TMDL) issues involving Long Pond. The pond has been listed with the MA DEP as having a problem with nutrients and noxious aquatic plants. The BMP proposes to review information available in municipal archives and with the Merrimack River Watershed Council (MRWC), and to prepare to address the identified water quality issues.

Primary Audience:

Measurable Goals:

- ✓ Develop sampling protocol for testing tributaries.
- ✓ Implement sampling protocol.#1
- ✓ Develop response based on sampling.

Responsible Parties: Board of Health

Implementation Strategies: A record review of municipal, state, and MRWC records will be conducted to determine the extent of the problem, and then a response plan will be developed. The plan will include appropriate sampling of the pond and its tributaries, and eventually a method of addressing the issues.

Timeline: Protocol Winter of 2004, Implementation Fall of 2005, Response Summer of 2006 **Annual Evaluation:** The Board of Health will issue a written activity report at the end of each year, detailing the actions taken and accomplished.

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Control Measure #7: Round Pond TMDL Issues

BMP 7 C: Round Pond

BMP Description: The BMP will review Total Maximum Daily Load (TMDL) issues involving Round Pond. The pond has been listed with the MA DEP as having a problem with noxious aquatic plants. The BMP proposes to review information available in municipal archives and with the Merrimack River Watershed Council (MRWC), and to prepare to address the identified water quality issues.

Primary Audience:

Measurable Goals:

- ✓ Develop Study Protocol
- ✓ Seek funding to conduct study
- ✓ If funded, conduct study
- √ If funded, develop response plan

Responsible Parties: Conservation Commission

Implementation Strategies: A record review of municipal, state, and MRWC records will be conducted to determine the extent of the problem, and then a response plan will be developed. The plan will include appropriate sampling of the pond and its tributaries, and eventually a method of addressing the issues.

Timeline: Seek funding while developing protocol during 2004, Conduct study (if funded) during 2005, Response plan developed during 2006 (if funding was found)

Annual Evaluation: The Board of Health will issue a written activity report at the end of each year, detailing the actions taken and accomplished.

Control Measure #7: Trull Brook TMDL Issues

BMP 7 D: Trull Brook

BMP Description: The BMP will review Total Maximum Daily Load (TMDL) issues involving Trull Brook. The brook has been listed with the MA DEP as having a problem with unknown toxicity. The BMP proposes to review information available in municipal archives and with the Merrimack River Watershed Council (MRWC), and to prepare to address the identified water quality issues.

Primary Audience:

Measurable Goals:

- ✓ Meet w/ MRWC to discuss and review earlier review
- ✓ Develop plan for further study.
- ✓ Seek funding for study.
- ✓ If funded, conduct study.
- ✓ If funded, develop response plan.

Responsible Parties: DPW, Engineering, Conservation, Board of Health

Implementation Strategies: A record review of municipal, state, and MRWC records will be conducted to determine the extent of the problem, and then a response plan will be developed. The plan will include appropriate sampling of the brook and its tributaries, and eventually a method of addressing the issues.

Timeline: Meeting and review Spring of 2004; Develop plan Summer through Winter of 2004; Seek funding throughout 2005; if funding is found, conduct study Spring and Summer of 2006; if funding is found, develop plan during Fall and Winter 2006.

Annual Evaluation: The Board of Health will issue a written activity report at the end of each year, detailing the actions taken and accomplished.

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NPDES Team

This broad based Stormwater Management Plan was developed with the participation of several Town departments. Many thanks to the participants in this program.

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Bill Burris Superintendent, DPW

Walter Polchlopek Administrator, Conservation Department

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